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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/584,005  
Filing Date: August 15, 2006  
Appellant(s): VAN DER HORST, PETER MARTEN

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Christopher S. Casieri  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 4/12/2011 appealing from the Office action mailed 10/21/2010.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

Claims 1, 2 and 12-15 are pending and have been finally rejected.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

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subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

### **WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. All rejections of Claims 5, 8 and 9 due to the cancellation of the claims after the Final Rejection mailed 10/21/2010. The amendment to the claims was entered by the Advisory Action mailed 1/3/2011.

### **(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

### **(8) Evidence Relied Upon**

5,616,409	Matsuda et al	04-1997
5,368,689	Agnemo, Arne R.	11-1994
4,808,633	Ferguson et al	02-1989
5,989,391	Watanabe et al	11-1999

Hosokawa et al, JP 2002-201202 A, 07/19/2002.

Machine translation of Hosokawa et al, JP-2002-201202, which was provided by Appellant and is used in the rejections. A full translation of the reference has been ordered and will be placed in the file when received.

Smook, Gary A., Handbook for Pulp and Paper Technologists, 2nd ed, Angus Wilde Publications, 1992, p 288.

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 103***

Claims 1, 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al (US 5616409) in view of Hosokawa et al (JP 2002-201202 A – a machine translation provided by the Applicant is used herein) and as evidenced by Watanabe et al (US 5989391).

Matsuda et al discloses an ink jet recording medium comprising a paper substrate having a basis weight from 50 to 100 g/m<sup>2</sup> and containing from 5 to 30 percent by weight of a filler and retention aids (Abs; col 1, lines 6-10; col 2, lines 25-32; col 3, lines 33-35 and 60-64; col 4, lines 9-18 and 25-27).

Matsuda et al discloses that the paper comprises a coating in an amount of 2 to 10 g/m<sup>2</sup> on at least one surface, the coating comprising a white pigment and a binder such as a carboxymethyl cellulose (col 4, lines 28-33; col 5, lines 10-15).

Matsuda et al does not disclose the claimed cellulose ether.

JP 2002-201202 discloses CMC having a DS of carboxymethyl groups (anionic) from 0.4 to 2.0, preferably from 0.6 to 1.8, and a DS of cationic groups of 0.1 to 1.0, and an overall ratio of cationic DS to anionic DS from 0.01 to 0.5, thus resulting in a net anionic charge that overlays the claimed range (pars 1, 11, 15, 19, 20 and 23-26). The CMC is used as a coagulating agent (reads on retention aid), a flocculating agent (reads

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on retention aid), a fixing agent (reads on retention aid), a dispersion stabilizer, a yield improver (reads on retention aid) for papermaking, as a sizing agent and as an adhesive (pars 1 and 38). Paper comprising the disclosed CMC and having improved tensile strength and Stockigt sizing degree is disclosed (pars 35-37). The CMC is cationized by reacting the uncationized CMC with 3-chloro-2-hydroxypropyl trimethyl ammonium chloride, which results in the claimed quaternary ammonium groups (pars 24-26).

The disclosed CMC has a structure substantially identical to that claimed and will have the claimed water solubility because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent. Alternatively, the degree of water solubility is not defined in the Specification and is only briefly discussed on p 5, lines 3-5 with respect to improving the water solubility. One of ordinary skill in the art would expect at least some water solubility in the disclosed CMC due to the ionic groups thereon.

The art of Matsuda et al, Hosokawa et al and the instant invention is analogous as pertaining to papers comprising fillers and retention aids. Absent convincing evidence commensurate in scope with the claims, it would have been obvious to one of ordinary skill in the art to use the claimed cellulose ether as a retention aid in the paper

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of Matsuda et al in view of Hosokawa et al as a functionally equivalent option and to have a reasonable expectation of success. It would also have been obvious to use the claimed cellulose ether as the disclosed carboxymethyl cellulose binder in the coating.

Claims 12, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al in view of Hosokawa et al and further in view of Ferguson et al (US 4808633).

The disclosures of Matsuda et al and Hosokawa et al are used as above. Matsuda et al and Hosokawa et al do not disclose the claimed papermaking steps.

Ferguson et al discloses that paper is typically made by adding materials such as retention aids and fillers to an aqueous papermaking stock, draining water from the stock and drying the stock (col 1, lines 8-18).

The art of Matsuda et al, Hosokawa et al, Ferguson et al and the instant invention is analogous as pertaining to making paper comprising fillers and retention aids. It would have been obvious to one of ordinary skill in the art to use the claimed steps to make the paper of Matsuda et al in view of Hosokawa et al and further in view of Ferguson et al as a typical papermaking process.

Claims 1, 2 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agnemo (US 5368689) in view of Hosokawa et al and as evidenced by Smook (Handbook for Pulp and Paper Technologists).

Agnemo discloses a paper comprising retention aids, fillers, a particular acid and a reduction agent (Abs, col 2, lines 33-58). In some embodiments, the paper is supercalendered paper having a filler content of about 20-30% by weight of the dry paper (col 3, line 66 to col 4, line 3). In other embodiments, the paper is a fine paper comprising 5-30% filler by weight of the dry paper and an outermost layer comprising a surface size (reads on a paper coating) or a coating layer (col 4, lines 10-28). The paper is made by adding the retention aids, fillers to an aqueous papermaking stock, dewatering the stock and drying the stock (col 5, lines 15-30; col 6, lines 11-14).

Agnemo does not disclose the claimed cellulose ether.

The disclosure of Hosokawa et al is used as above.

The art of Agnemo, Hosokawa et al and the instant invention is analogous as pertaining to papers comprising fillers and retention aids. Absent convincing evidence commensurate in scope with the claims, it would have been obvious to one of ordinary skill in the art to use the claimed cellulose ether as a retention aid in the paper of Agnemo in view of Hosokawa et al as a functionally equivalent option and to have a reasonable expectation of success. It would also have been obvious to use the claimed cellulose ether as the disclosed surface size or coating.

Alternatively, a coating composition is described for coated papers that comprises pigments, a binder such as carboxymethyl cellulose, etc. (col 3, lines 49-65). Common components of paper coatings as known in the art include adhesives, thickeners (including cellulose derivatives) and dispersants (for evidence, see Smook, p 288, Table 18-3). The uses of the carboxymethyl cellulose of JP 2002-201202 include



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the functions of the aforementioned components. It would have been obvious to one of ordinary skill in the art to use a coating having pigments, binder and other common components for the coating of the fine paper and to use the claimed cellulose ether as the disclosed carboxymethyl cellulose binder or as an adhesive, thickener or dispersant in the coating.

### **(10) Response to Argument**

Rejection of Claims 1, 2, 5, 8, 9 and 14 under 35 U.S.C. 103(a) over Matsuda et al in view of Hosokawa et al:

Appellant argues that the cationically modified cellulose ether of Hosokawa et al is not functionally equivalent to the anionic and nonionic cellulose ethers of Matsuda et al and that Matsuda et al discloses a CMC (carboxymethyl cellulose) binder in a coating while the CMC of Hosokawa et al is in the paper. Appellant also argues that the coating of Matsuda et al has been equated with the claimed paper comprising ...cellulose ether.

Appellant's statement that the claims never required a coating only applies to the currently remaining claims. At the time of the Final Office Action mailed 10/21/2010, Claims 5, 8 and 9 were present in the application and were directed to a paper coating comprising a cellulose ether. Claims 5, 8 and 9 were subsequently cancelled, thus the reference in the Advisory Action that the claims no longer require a coating composition.

As discussed in the outstanding rejection, Matsuda et al discloses a paper that has retention aids as well as a coating comprising a binder. Suitable binders are cellulose derivatives such as CMC. Hosokawa et al discloses that CMC having cationic and anionic degrees of substitution overlaying the claimed ranges are used as a

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coagulating agent (reads on retention aid), a flocculating agent (reads on retention aid), a fixing agent (reads on retention aid), a dispersion stabilizer, a yield improver (reads on retention aid) for papermaking, as a sizing agent and as an adhesive (pars 1 and 38).

Absent convincing evidence of unobvious results commensurate in scope with the claims, one of ordinary skill in the art would have found it obvious to use the cationically modified CMC of Hosokawa et al as either the CMC binder (or adhesive) in the coating of Matsuda et al or as a retention aid in the paper and, have a reasonable expectation of success in obtaining either a suitable coating on the paper or of achieving retention of filler and/or other adjuvants in the paper. In either case, a paper comprising the claimed cellulose ether is obtained.

Appellant argues that the CMC of Matsuda et al is anionic. The claimed cellulose ether has a net anionic charge, thus is also anionic.

The argument that using cationically modified cellulose ethers in coatings can result in flocculation of the coating is the argument of counsel and cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) (“An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness.”).

The argument that Matsuda et al only uses non-cationically substituted celluloses has no basis of fact in the disclosure of Matsuda et al, which teaches CMC in general as a cellulose ether. One of ordinary skill in the art, reading Matsuda et al, would not have limited the general recitation of cellulose ether or CMC as limited to only non-cationically

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substituted versions. Furthermore, one of ordinary skill would have known of relevant references generally available in the art, such as Hosokawa et al, that taught more specifically that cationically modified CMCs that overlay the claimed compounds were suited for the desired adhesive or binder purposes or for retention aids. Absent convincing evidence of unobvious results commensurate in scope with the claims, one of ordinary skill in the art would have found it obvious to use the cationically modified CMC of Hosokawa et al as either a CMC binder (or adhesive) in the coating of Matsuda et al or as a retention aid in the paper and, have a reasonable expectation of success. The CMCs of Hosokawa et al are taught for use as retention aids and adhesives, thus are functionally equivalent options to other retention aids and adhesives.

Regarding the use of impermissible hindsight, "Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper." In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971). The disclosure of Hosokawa et al was knowledge that was within the level of ordinary skill at the time of the claimed invention.

The rejection is not trying to say, as Appellant suggests, that it would have been obvious to try a general approach that seemed to be a promising field of experimentation. One of ordinary skill in the art would not have needed to vary all of the parameters until possibly arriving at a successful result, where the prior art gave no indication of which parameters were critical or no direction of which of the many

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possible choices is likely to be successful. Where one piece of prior art, Matsuda et al, gave only general guidance, the other prior art reference, Hosokawa et al, specifically taught the claimed CMCs for use as retention aids and adhesives.

The rejection of Claims 12, 13 and 15 under 35 U.S.C. 103(a) over Matsuda et al in view of Hosokawa et al and further in view of Ferguson et al:

The argument regarding impermissible hindsight has been addressed above. Ferguson et al teaches the steps in a “typical” papermaking process, which would have been generally known to those of ordinary skill in the art. There is no suggestion in Matsuda et al or Hosokawa et al that anything but a typical papermaking process need be used, thus the typical process would have been obvious to use.

Appellant argues that Ferguson et al should be used in its entirety and that the reference exemplifies only hydroxyethyl cellulose (HEC). The HEC of Ferguson et al was used to form the vesiculated polymer granules which were incorporated into paper to provide opacity. Ferguson et al does not discuss CMC at all thus cannot teach for or against its usage. In any case, as discussed in the rejections, Ferguson et al was used to provide a teaching of typical papermaking steps generally known in the art.

The rejection of Claims 1, 2, 5, 8, 9 and 12-15 under 35 U.S.C. 103(a) over Agnemo in view of Hosokawa et al and as evidenced by Smook (Handbook for Pulp and Paper Technologists).

The arguments against Agnemo et al in view of Hosokawa et al are similar to those discussed above and a similar reply applies. In addition, a few additional comments are deemed necessary.

Appellant argues that Agnemo et al discloses CMC in a coating while Hosokawa et al discloses the CMC in the paper. As discussed in the rejection, Agnemo et al also discloses a paper comprising retention aids. Hosokawa et al discloses the cationically modified CMC used as retention aids, sizing (which is known in the art to be used internally and as a coating on paper) and adhesive. Absent convincing evidence commensurate in scope with the claims, it would have been obvious to one of ordinary skill in the art to use the claimed cellulose ether as a retention aid in the paper of Agnemo in view of Hosokawa et al or as a surface size or coating additive.

Alternatively, common components of paper coatings as known in the art include adhesives, thickeners (including cellulose derivatives) and dispersants (see Smook, p 288, Table 18-3). The uses of the carboxymethyl cellulose of JP 2002-201202 include the functions of the aforementioned components. It would have been obvious to one of ordinary skill in the art to use a coating having pigments, binder and other common components for the coating of the fine paper and to use the claimed cellulose ether as the disclosed carboxymethyl cellulose binder or as an adhesive, thickener or dispersant in the coating.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Dennis Cordray/

Examiner, Art Unit 1741

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